

Application Serial No. 10/525,902
Reply to Office Action of January 14, 2009

MAY 13 2009

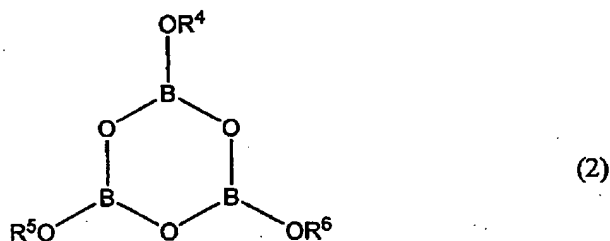
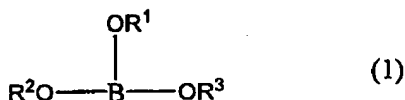
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Amendments to the Claims

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Currently amended) A lubricating oil composition for an internal combustion engine, ~~which comprises~~ consisting of:
a lubricant base oil comprising a mineral oil and/or a synthetic oil wherein a total aromatic content and sulfur content in the lubricating base oil are adjusted to 10% by mass or less and 0.05% by mass or less, respectively;
(A) 0.001 to 0.5% by mass of an ester of boric acid in terms of boron element therein, represented by the following general formula (1) or (2)



wherein in the general formula (1) and (2), R¹ to R⁶ each may be same or different, each independently represents a hydrocarbon group having 1 to 30 carbon atoms;
and (B) 0.01 to 5% by mass of an ashless antioxidant;
(C) 0.005 to 1% by mass of metal-based detergent in terms of metal element therein;
and
(D) 0.05 to 0.4% by mass of non-borated bis succinimide in terms of nitrogen element therein;

wherein said composition contains substantially no metal salts of dithiophosphoric acid, has a sulfur content of 0.2% by mass or less, and contains substantially no phosphorus, the metal ratio of the component (C) is 3 or less, the percentage of (A) – (D) and the sulfur content being based on a total mass of the composition.

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2. – 4. (Cancelled)

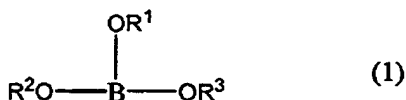
5. (Previously presented) The lubricating oil composition for an internal combustion engine according to claim 1, wherein the component (C) is a metal-based detergent which contains substantially no sulfur.

6. (Cancelled)

7. (Previously presented) The lubricating oil composition for an internal combustion engine according to claim 1, which has a sulfur content of 0.05% by mass or less, based on the total mass of the composition.

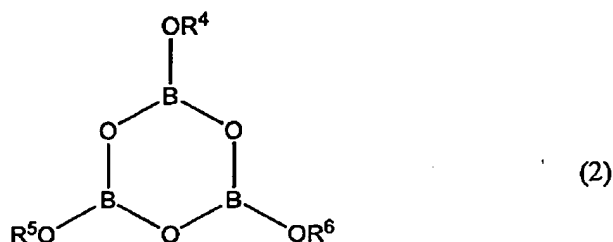
8. (Previously presented) The lubricating oil composition for an internal combustion engine according to claim 1, which is for an internal combustion engine using a fuel having a sulfur content of 50 ppm by mass or less.

9. (Currently amended) A method for lubricating a valve train of an internal combustion engine ~~comprising~~ consisting of the steps of:
~~a step of~~ preparing a lubricating oil composition ~~which comprises~~ consisting of a lubricant base oil comprising a mineral oil and/or a synthetic oil wherein a total aromatic content and a sulfur content in the lubricating base oil are adjusted to 10% by mass or less and 0.05% by mass or less, respectively, (A) 0.001 to 0.5% by mass of an ester of boric acid in terms of boron element therein, represented by the following general formula (1) or (2)



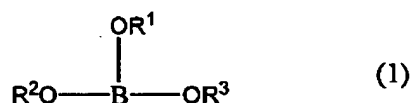
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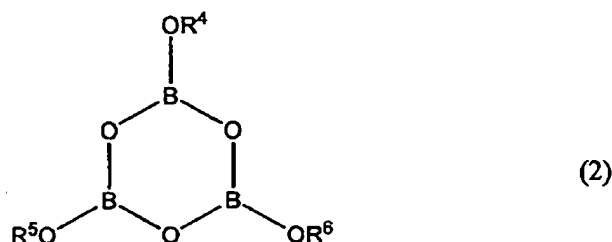
wherein in the general formula (1) and (2), R^1 to R^6 each may be same or different, each independently represents a hydrocarbon group having 1 to 30 carbon atoms; (B) 0.01 to 5% by mass of an ashless antioxidant, (C) 0.005 to 1% by mass of metal-based detergent in terms of metal element therein; and (D) 0.05 to 0.4% by mass of non-borated bis succinimide in terms of nitrogen element therein; wherein said composition contains substantially no metal salts of dithiophosphoric acid, has a sulfur content of 0.2% by mass or less, and contains substantially no phosphorus, the metal ratio of the component (C) is 3 or less, the percentage of (A) – (D) and the sulfur content being based on a total mass of the composition; and a step of using the lubricating oil composition in lubrication of a valve train of an internal combustion engine.

10. (Currently amended) A method for improving long drain performance of a lubricating oil composition for an internal combustion engine ~~comprising~~ consisting of the steps of: ~~a step of~~ adding, into a lubricating oil composition ~~which comprises~~ consisting of a lubricant base oil comprising a mineral oil and/or a synthetic oil wherein a total aromatic content and a sulfur content in the lubricating base oil are adjusted to 10% by mass or less and 0.05% by mass or less, respectively, (A) 0.001 to 0.5% by mass of an ester of boric acid in terms of boron element therein represented by the following general formula (1) or (2)



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wherein in the general formula (1) and (2), R^1 to R^6 each may be same or different, each independently represents a hydrocarbon group having 1 to 30 carbon atoms; a ~~step of adding (B)~~ 0.01 to 5% by mass of an ashless antioxidant; ~~a step of adding (C)~~ 0.005 to 1% by mass of metal-based detergent in terms of metal element therein; ~~a step of adding (D)~~ 0.05 to 0.4% by mass of non-borated bis succinimide in terms of nitrogen element therein; wherein the metal ratio of the component (C) is 3 or less, the percentage of (A)-(D) being based on a total mass of the composition; consequently providing composition containing substantially no metal salts of dithiophosphoric acid, having a sulfur content of 0.2% by mass or less, and contains substantially no phosphorus, the percentage of the sulfur content being based on a total mass of the composition.

11. – 15. (Cancelled)

16. (Previously Presented) The lubricating oil composition for an internal combustion engine according to claim 1, wherein the component (C) is an alkali metal or alkaline earth metal salicylate.

17. (Previously Presented) The lubricating oil composition for an internal combustion engine according to claim 1, wherein the component (B) is octyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate.

18. (Previously Presented) The lubricating oil composition for an internal combustion engine according to claim 1, wherein the component (D) is polybutenylsuccinimide (bis type).